

Carolina (Saussure), Louisiana (Saussure), Tamaulipas, Mex. (Saussure), and Nicaragua (Bruner.)

***Ellipes minuta* (Scudder).**

I have examined specimens from Southern Illinois (Thomas), Rock Island, Ill. (Walsh), Indiana (Blatchley), Georgia (Morrison), Enterprise, Fla. (Schwarz), Biscayne Bay, Fla. (Mrs. Slosson), Lake Worth, Fla. (Slosson), Charlotte Harbor, on stalk of *Spartina* near water (Slosson), Palm Beach, Fla.

(Slosson), Agricultural College, Miss., Oct. (Weed), Texas, not common, running on margins of streams (Belfrage), Dallas, Tex. (Boll), Palm Springs, Cal., July 13 (Morse), Ahwanee, Cal., Aug. 15 (Morse), and San Bernardino, Cal., July 16 (Morse). It has also been reported from Minnesota (Lugger), Nebraska (Bruner), Mississippi and Florida (Ashmead), Cuba (Saussure), St. Vincent and Grenada (Brunner and Redtenbacher), and Vera Cruz and Tabasco, Mex. (Saussure).

LIFE HISTORIES OF NORTH AMERICAN GEOMETRIDAE. — XXX.

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Phiasne irrorata Pack. I have described the mature larva (Ent. News, v, 63, 1894).

Egg. Elliptical, strongly flattened, rounded, no angles; one end slightly and only in a small area truncate, the other somewhat depressed; smooth whitish green, the reticulations distinct, broad, elongate transversely, resembling low ridges especially toward the truncate end, irregular, somewhat waved. Size $.8 \times .6 \times .3$ mm.

Stage I. Normal, moderately elongate. Head rounded, erect, pale reddish luteous, elongate; clypeus moderate, reaching over half to vertex, pointed; sutures brown; ocelli small, black; width .35 mm. Body cylindrical, shields membranous, concolorous, anal feet spreading, the flap large, rounded. Pale greenish, a broad, dark olive dorsal shade on joints 3 to 12, defining the subventral fold which looks pale by contrast; venter faintly olive; tubercles and setae small, in pale spots in the dorsal space; setae short and stiff, dusky, very minutely enlarged at the tip, normal.

Stage II. Head rounded, somewhat elongate with a high narrow clypeus, held obliquely; pale dull luteous, ocelli black, mouth brown; width .45 mm. Body moderate, segments not elongate, normal, pale translucent green with faintly indicated, narrow, white lines; tubercles large and elevated, most distinct posteriorly, transverse, white; setae short, dark; abdominal feet with very faint brown tint. No shields and practically no marks above. A broad, purple-brown ventral band, the whole length, even on the labium.

Stage III. Head rounded, free, larger than joint 2, pale straw color, a broad light brown stripe up from the antennae to across the center of lobe; width .9 mm. Body cylindrical not elongate, translucent green, not shining, a faint, diffuse, narrow, broken, dorsal line; subventral fold yellowish, venter purple brown. Thoracic feet black, appressed, the feet of joint 10 black outwardly, of 13 green except in front. Tubercles whitish, rounded, slightly elevated. Later no dorsal line but faint longitudinal white lines.

Stage IV. (Green form). Head round, flattened, oblique, clypeus half to vertex, mouth projecting, antennae moderate, divergent; green, whitish in the clypeus, antennae white, mouth brownish shaded; width 1.4 mm. Body cylindrical, slightly narrowed before, normal, moderate; segments obscurely 6-anulate. Green, faintly white lined; thoracic feet and a row of segmentary, diffuse, subconfluent ventral spots and base of foot of joint 10 purple brown. The more distinct pale lines are addorsal, subdorsal, a broad slightly yellowish diffuse one on subventral fold and broken adventral. Tubercles whitish green, roundedly elevated, low. Setae short, obscure. (Brown form). Head broadly brown over the lobes, the edges of the patch mottled, brown marks on sutures and in clypeus. Body pale brown, faintly pale lined; a dark brown dorsal line and broken stigmatal one, rather broad; ventral and foot marks as in the green form. Subventral fold broadly pale.

Stage V. (Green form.) Head green, rounded, flatly outstretched, whitish streaked about clypeus, antennae rather long, yellowish white, mouth pale; width 2 mm. Body cylindrical, subventral fold distinct; uniform, not elongate. Green, whitish over the dorsum, with addorsal, subdorsal and double lateral irregular, faint, whitish lines; subventral fold diffusely yellow. Feet green, normal. Tubercles minute; setae rather long but fine, dusky. A brownish shade at the base of the foot of joint 10. (Brown form.) Head with a large chocolate patch on each lobe shading into reticulations at the edge, leaving the clypeus mostly pale. Body milky chocolate, the subventral fold broadly and diffusely yellow; dorsum and venter with several obscure darker lines. On the sides of joints 2 to 4 and 10 to 11 and on joints 5 to 9, forming nearly completely encircling bands are irregular dark chocolate mottlings. Tubercles chocolate, spiracles pale. The bands vary in extent and distinctness. Foot of joint 11 chocolate; anal plate pale brown.

Pupation in the ground.

Food plant. Cottonwood (*Populus fremontii wislizeni*); they will also eat willow. Larvae from Denver, Colorado. Eggs May 11th, mature larva June 7th.

ECONOMIC ENTOMOLOGY.—Sanderson's *Insects injurious to staple crops* (New York, John Wiley and Sons, 1902) contains fifteen chapters devoted to injury done staple crops by insect pests. Structure and development of insects, General farm practice against injurious insects, Beneficial insects. Insects injurious to grains and grasses, to wheat, to Indian corn, Weevil in grain, Insects injurious to clover, to cotton, to tobacco, to the potato, to the sugar-beet, to the hop-plant, and Insecticides.

The text though compiled and not comprehensive will serve the purpose of the author fairly well; a direct reference to a detailed account of each species would have been of real benefit. Most of the illustrations have been used previously and the source is acknowledged though in some cases inadequately; the helpfulness of some of the original cuts (*e. g.* Figs. 4 and 5) may well be questioned.

PROCEEDINGS OF THE CLUB.

8 March, 1901. The 219th meeting was held at 156 Brattle St., Mr. S. H. Scudder in the chair.

Mr. Samuel Henshaw was unanimously elected a life member as a token of the Club's appreciation of his generosity.

Mr. C. W. Woodworth remarked on observations he had made on *Aleurodes citri*, which feeds on the under side of the leaves of orange trees in Florida. He gave an interesting account of its anatomy and habits. Among other things he called attention to the curious arrangement of the stigmata and tracheae, owing to the extreme flatness of the insect. He also stated that all the appendages except the mouth organs are shed in